

$\Xi(2500)$

$I(J^P) = \frac{1}{2}(?)$ Status: *

J, P need confirmation.

OMITTED FROM SUMMARY TABLE

The ALITTI 69 peak might be instead the $\Xi(2370)$ or might be neither the $\Xi(2370)$ nor the $\Xi(2500)$.

$\Xi(2500)$ MASS					
<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
≈ 2500 OUR ESTIMATE					
2505±10		JENKINS 83	MPS	–	$K^- p \rightarrow K^+$ MM
2430±20	30	ALITTI 69	HBC	–	$K^- p$ 4.6–5 GeV/c
2500±10	45	BARTSCH 69	HBC	–0	$K^- p$ 10 GeV/c

$\Xi(2500)$ WIDTH					
<u>VALUE (MeV)</u>		<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	
150 ⁺⁶⁰ –40		ALITTI 69	HBC	–	
59±27		BARTSCH 69	HBC	–0	

$\Xi(2500)$ DECAY MODES					
Mode		Fraction (Γ_i/Γ)			
Γ_1	$\Xi^- \pi^+$				
Γ_2	$\Lambda \bar{K}$				
Γ_3	$\Sigma \bar{K}$				
Γ_4	$\Xi^- \pi \pi$	seen			
Γ_5	$\Xi(1530)\pi$				
Γ_6	$\Lambda \bar{K} \pi + \Sigma \bar{K} \pi$	seen			

$\Xi(2500)$ BRANCHING RATIOS					
$\Gamma(\Xi\pi)/[\Gamma(\Xi\pi) + \Gamma(\Lambda\bar{K}) + \Gamma(\Sigma\bar{K}) + \Gamma(\Xi(1530)\pi)]$		$\Gamma_1/(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)$			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>		
<0.5	ALITTI 69	HBC	1 standard dev. limit		
$\Gamma(\Lambda\bar{K})/[\Gamma(\Xi\pi) + \Gamma(\Lambda\bar{K}) + \Gamma(\Sigma\bar{K}) + \Gamma(\Xi(1530)\pi)]$		$\Gamma_2/(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)$			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>		
0.5±0.2	ALITTI 69	HBC	–		
$\Gamma(\Sigma\bar{K})/[\Gamma(\Xi\pi) + \Gamma(\Lambda\bar{K}) + \Gamma(\Sigma\bar{K}) + \Gamma(\Xi(1530)\pi)]$		$\Gamma_3/(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)$			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>		
0.5±0.2	ALITTI 69	HBC	–		
$\Gamma(\Xi(1530)\pi)/[\Gamma(\Xi\pi) + \Gamma(\Lambda\bar{K}) + \Gamma(\Sigma\bar{K}) + \Gamma(\Xi(1530)\pi)]$		$\Gamma_5/(\Gamma_1 + \Gamma_2 + \Gamma_3 + \Gamma_5)$			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>		
<0.2	ALITTI 69	HBC	1 standard dev. limit		
$\Gamma(\Xi\pi\pi)/\Gamma_{\text{total}}$		Γ_4/Γ			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>		
seen	BARTSCH 69	HBC	–0		
$[\Gamma(\Lambda\bar{K}\pi) + \Gamma(\Sigma\bar{K}\pi)]/\Gamma_{\text{total}}$		Γ_6/Γ			
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>		
seen	BARTSCH 69	HBC	–0		

$\Xi(2500)$ REFERENCES					
JENKINS 83	PRL 51 951	C.M. Jenkins <i>et al.</i>	(FSU, BRAN, LBL+)		
ALITTI 69	PRL 22 79	J. Alitti <i>et al.</i>	(BNL, SYRA+)		
BARTSCH 69	PL 28B 439	J. Bartsch <i>et al.</i>	(AACH, BERL, CERN+)		

NODE=B099

NODE=B099

NODE=B099M

NODE=B099M
→ UNCHECKED ←

NODE=B099W

NODE=B099W

DESIG=1

DESIG=2

DESIG=3

DESIG=6

DESIG=4

DESIG=5

NODE=B099220

NODE=B099R1
NODE=B099R1NODE=B099R2
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NODE=B099R3NODE=B099R4
NODE=B099R4NODE=B099R6
NODE=B099R6NODE=B099R5
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NODE=B099

REFID=32525
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REFID=32499